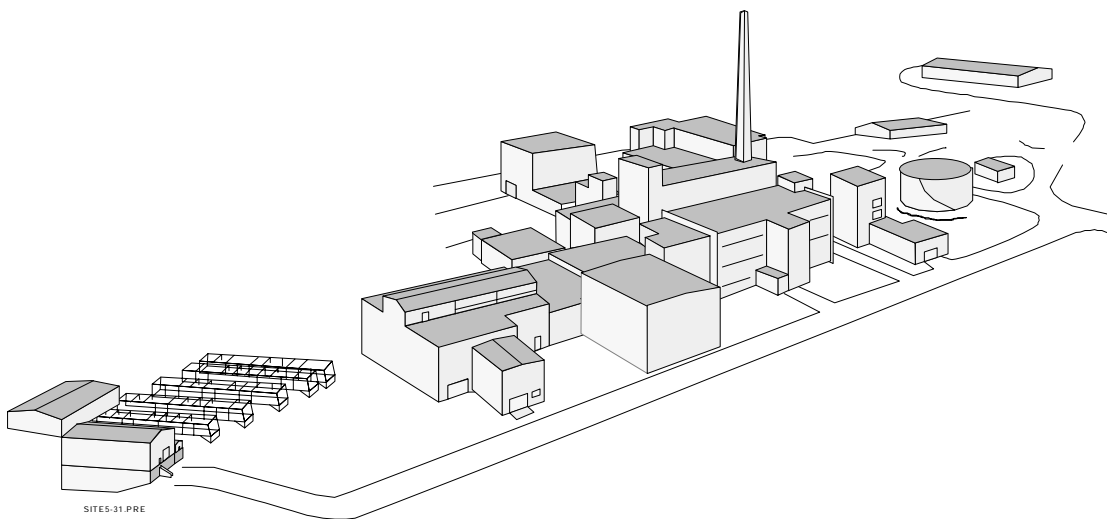


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# **WEST VALLEY DEMONSTRATION PROJECT ANNUAL SITE ENVIRONMENTAL REPORT CALENDAR YEAR 2002**



**WEST VALLEY NUCLEAR SERVICES COMPANY  
AND  
URS GROUP, INC.**



Prepared by: West Valley Nuclear Services Co. and URS Group, Inc.  
Prepared for: U.S. Department of Energy  
Ohio Field Office OH/WVDP

Under: Contract DE-AC24-81NE-44139

August 2003  
10282 Rock Springs Road  
West Valley, New York 14171-9799

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**Department of Energy**  
Ohio Field Office  
West Valley Demonstration Project  
10282 Rock Springs Road  
West Valley, NY 14171-9799

To The Reader:

This report, prepared by the U.S. Department of Energy (DOE) Ohio Field Office West Valley Demonstration Project (OH/WVDP), summarizes the environmental protection program at the West Valley Demonstration Project (WVDP) for calendar year 2002. As has been the practice in prior years, this report is being made available to the public as soon as possible in advance of DOE's required release date of October 1, 2003.

Monitoring and surveillance of the WVDP facilities are conducted in order to verify that public health and safety and the environment are protected. The quality assurance protocols applied to the environmental monitoring program by the DOE ensure the validity and accuracy of the monitoring data. Also included in this report are groundwater and ambient air data from the New York State Energy Research and Development Authority's (NYSERDA) New York State-licensed Disposal Area (SDA).

Air, surface water, groundwater, soil, and biological samples collected and analyzed for radiological and nonradiological constituents are evaluated for indication of potential effects of activities at the WVDP. Monitoring of treated water effluents and facility ventilation system emissions verified that the dose received by off-site residents continues to be minimal.

Calculated doses to the hypothetical maximally exposed off-site individual from airborne and waterborne radiological releases in 2002 were less than one (1) percent of the DOE limit. Radionuclide concentrations in biological samples were at levels near or statistically identical to background concentrations.

Nonradiological liquid effluent discharges are controlled and permitted through the New York State Pollutant Discharge Elimination System (SPDES). Discharges in 2002 were below regulatory limits without exception.

The Project's continuing commitment to safety was reaffirmed in 2003 when it was again awarded the DOE Voluntary Protection Program Star of Excellence Award. The WVDP is one of the few DOE sites to be awarded both the VPP Star and to be a National Environmental Performance Track member.

In early September 2002, the Project completed vitrification of high-level radioactive waste and shut down the glass melter. This marks the first vitrification program of its kind in the nation to be successfully completed.

If you have any questions or comments about the information in this report, please contact the West Valley Nuclear Services Company (WVNSCO) Communication Department at (716) 942-4555 or complete and return the enclosed survey.

Sincerely,

Alice C. Williams, Director  
West Valley Demonstration Project





## **SUMMARY OF CHANGES TO THE 2002 WVDP SITE ENVIRONMENTAL REPORT FROM THE 2001 SITE ENVIRONMENTAL REPORT**

This report, prepared by the U.S. Department of Energy (DOE) West Valley Demonstration Project office, summarizes the environmental protection program at the West Valley Demonstration Project (WVDP) for calendar year (CY) 2002. Monitoring and surveillance of the facilities used by the DOE for the WVDP are conducted in order to protect public health and safety and the environment. The quality assurance protocols applied to the environmental monitoring program by the DOE ensure the validity and accuracy of the monitoring data. Also included in this report are groundwater and ambient air data from the New York State Energy Research and Development Authority's (NYSERDA) New York State-licensed Disposal Area (SDA).

Changes in content for the 2002 annual Site Environmental Report are summarized below.

### **REVISIONS AND ADDITIONS:**

- The Executive Summary, Introduction, and Environmental Compliance Summary were updated to describe implementation of the environmental monitoring program, special topics of importance, and status of regulatory compliance in CY 2002. A table summarizing WVDP migratory bird nest depredation episodes during the year was added to the Environmental Compliance Summary. The table of permits at the end of the Environmental Compliance Summary was updated to reflect those in effect in CY 2002.
- Data and text were updated throughout the report to reflect results from the CY 2002 environmental monitoring program. Tables, graphs, maps, supplemental information sections, and references also were updated.
- Chapters were reorganized to conform more closely with the suggested format for Annual Site Environmental Reports as provided in DOE guidance for CY 2002. Modifications are described below.
- Chapter 1 summarizes 2002 activities at the WVDP, including the completion of vitrification, tank cleaning and characterization, ongoing decontamination of site facilities, constructing the remote-handled waste facility, and environmental management of waste, liquid releases, and airborne emissions. All graphs were updated to include 2002 performance results.
- Chapter 2 was renamed "Environmental Radiological Program Information" (from "Environmental Monitoring") and the discussion of radiological dose assessment, formerly found in Chapter 4, was moved into this chapter. Results from air, water, soil, sediment, and biological samples taken from on-site, near-site, community, and background locations for CY 2002 were evaluated and discussed. Doses to the maximally-exposed individual and doses to the population were estimated and compared with applicable limits. Dose to biota was evaluated per the DOE standard issued in 2002.
- Chapter 3 was renamed "Environmental Nonradiological Program Information" (from "Groundwater Monitoring") and information on monitoring for nonradiological parameters, formerly included in Chapter 2, was moved to this chapter. Additional detail on nonradiological standards and limits was added.

- Chapter 4 was renamed “Site Hydrology and Groundwater Monitoring” (from “Radiological Dose Assessment”) and material from last year’s Chapter 3 (“Groundwater Monitoring”) was moved into Chapter 4.
- The environmental monitoring program is modified as site activities and conditions change, monitoring data are assessed and conclusions reached, and new regulatory or permit requirements take effect. In 2002, monitoring at location ANLAUNV (laundry air emissions) was discontinued. Also, monitoring at location WNSP01B (wastewater effluent from mercury abatement system) was added, and the monitoring parameter list for WNSP001 (Lagoon 3 water effluent) was modified in accordance with the modified SPDES permit issued in 2002. These changes are summarized in Appendix B.
- Appendix C, formerly “Summary of Water, Sediment, and Soil Monitoring Data,” was split into two new appendices: Appendix C, “Summary of Water Monitoring Data,” with five sub-appendices, and Appendix G, “Summary of Soil and Sediment Data,” with two sub-appendices.
- There were no errata or corrigenda from the 2001 Site Environmental Report.

#### **ACTIVITY UPDATES FOR CY 2002:**

- Vitrification was completed and the melter was shut down.
- Facility characterization (e.g., the waste tank farm and process cells) continued.
- Decontamination and clean-up of facilities (e.g., waste tanks, fuel receiving and storage pool, general purpose cell, process mechanical cell) continued.
- Low-level radioactive waste shipments continued.
- Construction of the Remote-Handled Waste Facility continued.

**West Valley Demonstration Project**  
**Annual Site Environmental Report**  
**for**  
**Calendar Year 2002**

*Prepared for the U.S. Department of Energy*

*Ohio Field Office*

*West Valley Demonstration Project Office*

*under contract DE-AC24-81NE-44139*

*August 2003*

*West Valley Nuclear Services Company and URS Group, Inc.*

*10282 Rock Springs Road*

*West Valley, New York 14171-9799*

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# Preface

*Environmental monitoring at the West Valley Demonstration Project (WVDP) is conducted by the West Valley Nuclear Services Company (WVNSCO), under contract to the U.S. Department of Energy (DOE). The data collected provide an historical record of radionuclide and radiation levels and chemical data from natural and man-made sources in the survey area. The data also document the chemical and radiological quality of the groundwater on and around the WVDP and of the air and water released by the WVDP. Meteorological data are also presented.*

*It is the policy of the WVDP to conduct all activities, including design, construction, testing, start-up, commissioning, operation, maintenance, and decontamination and decommissioning, in a manner that is appropriate to the nature, scale, and environmental effects of these activities. The WVDP is committed to full compliance with applicable federal and New York State laws and regulations for the protection of the environment, to continual improvement, to the prevention and/or minimization of pollution, and to public outreach, including stakeholder involvement.*

*This report represents a single, comprehensive source of off-site and on-site environmental monitoring data collected during 2002 by environmental monitoring personnel. The environmental monitoring program and results are discussed in the body of this report. Additional monitoring information is presented in the appendices. Appendix A contains maps of on-site and off-site sampling locations. Appendix B is a summary of the site environmental monitoring schedule. Appendices C through J contain summaries of data obtained during 2002 and are intended for those readers interested in more detail than is provided in the main body of the report. Appendix K lists laws and regulations pertaining to the WVDP. Appendix L provides groundwater monitoring data from the New York State-licensed Disposal Area.*

*Requests for additional copies of the 2002 Annual Site Environmental Report and questions regarding the report should be referred to the WVDP Communications Department, 10282 Rock Springs Road, West Valley, New York 14171 (telephone: 716-942-4555). Additional Project information is available on the internet at <http://www.wv.doe.gov>.*

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